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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.           | CONFIRMATION NO. |
|---|-------------|----------------------|-------------------------------|------------------|
| 10/527,441  | 07/20/2005  | Ding Yuan            | UMC.10021                     | 2202             |
| 45473   | 7590        | 10/17/2007           |                               |                  |
| HUTCHISON LAW GROUP PLLC<br>PO BOX 31686<br>RALEIGH, NC 27612 |             |                      | EXAMINER<br>ZIMMERMAN, JOHN J |                  |
|   |             |                      | ART UNIT                      | PAPER NUMBER     |
|   |             |                      | 1794                          |                  |
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|   |             |                      | 10/17/2007                    | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                               |                             |  |
|------------------------------|-------------------------------|-----------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/527,441 | Applicant(s)<br>YUAN ET AL. |  |
|                              | Examiner<br>John J. Zimmerman | Art Unit<br>1794            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on October 9, 2007 (election).
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 8-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on March 10, 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20050720</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **FIRST OFFICE ACTION**

### ***Election/Restrictions***

1. This First Office Action is in response to applicant's election without traverse of Group I, claims 1-7 and 12, in the correspondence titled "RESPONSE TO RESTRICTION REQUIREMENT" received October 9, 2007. Nonelected claims 8-11 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention.

### ***Priority***

2. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. 119(a)-(d) or (f). A copy of the certified copy of the priority document has been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

### ***Information Disclosure Statement***

3. The "INFORMATION DISCLOSURE STATEMENT" received July 20, 2005 has been considered. An initialed form PTO-1449 is enclosed with this First Office Action.

*Specification*

4. The abstract in this application is a copy of the first page of the published International Application and therefore contains extraneous information other than the abstract. An abstract on a separate sheet is required.

*Claim Objections*

5. Claim 12 is objected to because it depends on a claim that is withdrawn from prosecution. Claim 12 should be canceled or redrafted in independent form so that it does not depend on a withdrawn claim. Appropriate correction is required.

*Claim Rejections - 35 USC § 101*

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claim 5 and its dependent claim 6 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

*Claim Rejections - 35 USC § 112*

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8. Claims 1-7 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 1 contains a broad ratio range followed by a narrower ratio range (e.g. see lines 2-3. Claim 3 contains a broad ratio range followed by a narrower ratio range (e.g. see lines 3-4). Claims 4-7 and 12 are dependent claims that incorporate the ranges of the preceding claims. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

10. Claim 5 and its dependent claim 6 provide for the use of a coated powder, but, since the claim does not set forth any steps involved in the method/process, it is unclear what

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method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

*Claim Rejections - 35 USC § 102/103*

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1-2 and 4 are rejected under 35 U.S.C. 102(b) as anticipated by Weber (U.S. Patent 3,428,543).

14. Weber discloses nickel coated titanium powder wherein the nickel content is 60 % and the grain size is -140+325 mesh (see column 3, lines 69-74).

15. Claims 1-7 and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kurahashi (JP 59-031840).

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16. Kurahashi discloses forming Ni-Ti powder compacts by either mixing Ni powder with Ti powder or by plating Ni on Ti powder (see abstract and entire document). The Ti powder can have a grain size of between 0.1-15 microns which is finer than 150 mesh (e.g. see pending claim 4). The Ni-Ti compound is NiTi, Ni<sub>3</sub>Ti or NiTi<sub>2</sub>. The amount of Ni is preferred to be between 0.1-30 wt. %, but Kurahashi contains examples including up to 50 wt. % Ni in figure 1. All the disclosures in a reference must be evaluated for what they fairly teach one of ordinary skill in the art even if they are non-preferred embodiments, *In re Boe*, 148 USPQ 507 (CCPA 1966); *In re Smith*, 65 USPQ 167 (CCPA 1945); *In re Nehrenberg*, 126 USPQ 383 (CCPA 1960); *In re Watanabe*, 137 USPQ 350 (CCPA 1963). Kurahashi discloses the composition range with sufficient specificity to anticipate the claims. In addition, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 USPQ 549. See MPEP 2144.05. Kurahashi may differ from the method recitations of some of the rejected product claims in that Kurahashi may not use the same plating methods described in the claims (e.g. see claims 6, 7 and 12). The rejected claims, however are product claims and when there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process

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claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

17. Claims 1-4, 7 and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 50-8979.

18. JP 50-8979 discloses coating Ti, Ti alloy or Ti hydride powder with Ni to form a Ni-Ti series alloy containing between 45-65 at.% Ni with the balance Ti (see abstract and entire document). JP 50-8979 discloses the composition range with sufficient specificity to anticipate the claims. In addition, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 USPQ 549. JP 50-8979 may differ from the method recitations of some of the rejected product claims in that JP 50-8979 may not



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use the same plating methods described in the claims (e.g. see claims 7 and 12). The rejected claims, however are product claims and when there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q. 685, and *In re Fessmann*, 180 U.S.P.Q. 324. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. JP 50-8979 may also differ from some pending claims in that the coated powder is intended for spraying instead of sintering, but there is no factual evidence of record that sprayed coatings are patentably distinct from sintered coatings. Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

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19. Claims 1-4, 7 and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Afonichev (published abstract for RU 2039125).

20. Afonichev discloses coating Ti particles with Ni so that the composition contains between 20-70 wt.% Ni (see abstract). Afonichev discloses the composition range with sufficient specificity to anticipate the claims. In addition, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 USPQ 549. See MPEP 2144.05. The powder can have a size down to 45 microns which is finer than 150 mesh (e.g. see pending claim 4). Afonichev may differ from the method recitations of some of the rejected product claims in that Afonichev may not use the same plating methods described in the claims (e.g. see claims 7 and 12). The rejected claims, however are product claims and when there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” See *In re Thorpe*,

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777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. Afonichev may also differ from some pending claims in that the coated powder is intended for plasma spraying instead of sintering, but there is no factual evidence of record that plasma sprayed coatings are patentably distinct from sintered coatings. Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

21. Claims 1-7 and 12 are rejected under 35 U.S.C. 103(a) as obvious over Mackiw (U.S. Patent 2,853,403).

22. Mackiw discloses forming composite powders wherein the core can be titanium (e.g. see column 2, lines 13-29) and the coating can be nickel (e.g. see column 2, lines 30-39). The composite powders can be used for sintered compacts. Although Mackiw may not disclose specific ratios for the constituents when nickel is plated on titanium powder, it would have been obvious to one of ordinary skill in the art at the time the invention was made that any ratio of nickel to titanium could be used in Mackiw's process. Although Mackiw may not disclose a specific example of the combination of nickel coated on a titanium powder, Mackiw is not

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required to produce working examples of all possible combinations of materials that Mackiw discloses to be obvious for his invention. Mackiw may differ from the method recitations of some of the rejected product claims in that Mackiw may not use the same plating methods described in the claims (e.g. see claims 6, 7 and 12). The rejected claims, however are product claims and when there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

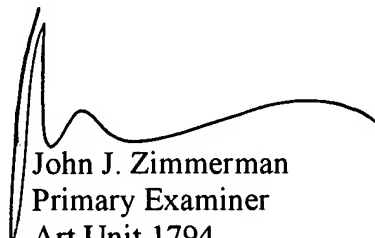
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*Conclusion*

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional prior art serves to further establish the level of ordinary skill in the art.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (571) 272-1547. The examiner can normally be reached on 8:30am-5:00pm, M-F. Supervisor Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



John J. Zimmerman  
Primary Examiner  
Art Unit 1794

jjz  
October 15, 2007